

## CLAIMS

1. A reversible multicolor recording medium,  
characterized by comprising:

5 recording layers each containing a plurality of  
reversible thermal coloring compositions having different  
coloring tones, formed to be separated from and stacked on  
a surface direction of a supporting substrate; and

said plurality of reversible thermal coloring  
10 compositions containing light-to-heat transforming  
materials which absorb infrared rays having different  
wavelength ranges to generate heat, respectively;

wherein an absorption peak wavelength of said  
light-to-heat transforming material contained in said  
15 recording layers becomes the longest wavelength at the layer  
formed nearest said supporting substrate, and becomes a  
shorter wavelength as the layer is closer to the surface layer  
in the stacked order.

20 2. The reversible multicolor recording medium according  
to claim 1, characterized in that at least one of said  
light-to-heat transforming materials is cyanine dyes or  
phthalocyanine dyes.

25 3. The reversible multicolor recording medium according  
to claim 1, characterized in that said plurality of recording  
layers are formed by stacking said recording layers via heat  
insulating layers, respectively.

30 4. The reversible multicolor recording medium according  
to claim 1 or 2, characterized in that a protective layer is

formed as the uppermost layer.

5. The reversible multicolor recording medium according to any of claims 1 to 4, characterized in that

5       said recording layers comprises a color-forming compound having an electron donating property and a develop/subtractive agent having an electron accepting property,

          wherein said recording layers are reversibly changed  
10 to two states of colored state and decolored state by a reversible reaction between said color-forming compound having an electron donating property and said develop/subtractive agent having an electron accepting property.

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6. A recording method for reversible multicolor recording medium recording image information using a reversible multicolor recording medium,

          said reversible multicolor recording medium having:  
20       recording layers each containing a plurality of reversible thermal coloring compositions having different coloring tones, formed separated from and stacked on a surface direction of a supporting substrate;

          said reversible thermal coloring compositions  
25 containing light-to-heat transforming materials which absorb infrared rays having different wavelength ranges to generate heat, respectively; and

          an absorption peak wavelength of said light-to-heat transforming material contained in said recording layers  
30 becomes the longest wavelength at the layer formed nearest said supporting substrate, and becomes a shorter wavelength

as the layer is closer to the surface layer in the stacked order;

wherein said recording method records image information is characterized by comprising the steps of:

5        setting said whole recording layers in a decolored state preliminarily by performing a heat treatment;

      exposing said recording layers by irradiating with an infrared ray having a selected wavelength range corresponding to a selected recording layer, in accordance with predetermined image information; and

10       allowing said recording layers to be selectively colored by generating to heat.

7.     A recording method for reversible multicolor recording medium recording image information using a reversible multicolor recording medium,

      said reversible multicolor recording medium having:  
      recording layers each containing a plurality of reversible thermal coloring compositions having different coloring tones, formed separated from and stacked on a surface direction of a supporting substrate;

20       said reversible thermal coloring compositions containing light-to-heat transforming materials which absorb infrared rays having different wavelength ranges to generate heat, respectively; and

      an absorption peak wavelength of said light-to-heat transforming material contained in said recording layers becomes the longest wavelength at the layer formed nearest said supporting substrate, and becomes a shorter wavelength as the layer is closer to the surface layer in the stacked order;

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wherein said recording method records image  
information is characterized by comprising the steps of:

setting said whole recording layers in a colored state  
preliminarily by performing a heat treatment;

5        exposing said recording layers by irradiating with an  
infrared ray having a selected wavelength range  
corresponding to a selected recording layer, in accordance  
with predetermined image information; and

allowing said recording layers to be selectively  
10    decolored by generating to heat.